

BULLETIN

OF THE INSTITUTE OF METALS

VOLUME 4

JULY 1959

PART 23

INSTITUTE NEWS

Forthcoming Meetings

For the information of members, meetings of the Institute and of the Powder Metallurgy Joint Group have been arranged as follows:

Autumn Meeting in Scandinavia, Monday, 21 September to Tuesday, 29 September 1959 (21-25 September in Stockholm and 26-29 September in Copenhagen).

Symposium on "The Application of Thin-Film Techniques to the Electron-Microscopic Examination of Metals", arranged by the Metal Physics Committee, on Thursday, 12 November 1959, at The Royal Institution, Albemarle Street, London, W.1, with a conversazione at 17 Belgrave Square on the previous evening.

Powder Metallurgy Joint Group Symposium on "The Powder Metallurgy of Magnetic Materials", on Wednesday, 16 December 1959, at Church House, Great Smith Street, London, S.W.1, with a conversazione in the evening.

1960 Spring Meeting at Church House, Great Smith Street, London, S.W.1, from Tuesday to Thursday, 29-31 March, inclusive, with the dinner at Grosvenor House on 31 March.

1960 Autumn Meeting from Monday to Friday, 5-9 September (place of meeting not yet arranged).

Election of Members

The following 23 Members, 4 Junior Members, and 10 Student Members were elected on 21 May 1959:

As Ordinary Members

- DE AGUIAR MENDES, Manoel Moacelio, Rua Thomaz Gonzaga 401, Belo Horizonte Minas Gerais, Brazil.
- ALDRIDGE, Capt. (retd.) Peter Trevett, Experimental Officer, Armament Research and Development Establishment, Fort Halstead, Kent.
- BENGTSON, Karl Erik Waldemar, Siviling., Överingenjör, Allmänna Svenska Elektriska AB (ASEA), Valsverksbyrån, Västerås, Sweden.
- BERRY, John Edward Walter, B.Sc., A.R.I.C., Lecturer, Applied Chemistry Department, Northampton College of Advanced Technology, London, E.C.1.
- BUCHINSKI, Joseph John, M.S., Metallurgical Engineer, General Plate Products, Metals and Controls Division, Texas Instruments, Inc., Attleboro, Mass., U.S.A.

- CARL, Kenneth, A.C.T. (Birm.), Development Engineer, Harrison (Birmingham), Ltd., Bradford Street, Birmingham.
- CREMENS, Walter Samuel, Sc.D., Headquarters, U.S. Air Forces in Europe, Technical Liaison Office, Wiesbaden, Germany.
- DAVIES, Jared Marshall, A.I.M., Chief Metallurgist, Teddington Aircraft Controls, Ltd., Cefn Coed, Merthyr Tydfil, South Wales.
- DOWNIE, David Brown, B.Sc., A.R.C.S.T., Lecturer, Metallurgy Department, Royal College of Science and Technology, Glasgow.
- EVANS, John Walter, B.Sc., Ph.D., D.I.C., F.R.I.C., Research Manager, Chrome-Alloying Co., Ltd., Birchwood Industrial Estate, Hatfield, Herts.
- GAZZANA-PRIAROGGIA, Paolo, Dott. Ing., A.M.I.E.E., Direttore dei Laboratori di Ricerca, Pirelli S.p.A., Viale Abruzzi 94, Milan, Italy.
- HOLWECH, Olaf M., Siviling., Forsvarets Forskningsinstitut's Bibliotek, Kjeller pr. Lilleström, Norway.
- HOWARTH, Harold, A.Met., Research and Development Department, The United Steel Companies, Ltd., Swinden Laboratories, Moorgate, Rotherham.
- JENKINS, W., B.Sc., A.M.I.E.E., Head of Laboratories, British Iron and Steel Research Association, Sketty Hall, Swansea, Glam.
- KÖVESI, Paul, Dr., Metallurgist, Research Department, English Steel Corporation, Sheffield.
- LONG, Charles Trevor, B.Sc., Chief Mechanical Engineer, South African Railways, P.O. Box 1006, Pretoria, Transvaal, South Africa.
- NAKAYAMA, Takakado, D.Eng., Sub-Manager of Laboratory, Nippon Light Metal Co., Ltd., 161 Kanbara, Kambaramachi, Ihara-gun, Shizuokaken, Japan.
- NEOGI, Surya Kumar, B.Sc., Mineral Resources Division, Department of Mines and Technical Surveys, 568 Booth Street, Ottawa, Ont., Canada.
- RASCH, Villy, Cand. polyt., Støberi ingeniør, A/S Nordiske Kabel- og Trådfabriker, Palermovej, Copenhagen, Denmark.
- RAUCH, Albert Harold, B.S., Manager, Metallurgical Division, Materials Engineering Department, Deere and Company, 1325 Third Avenue, Moline, Ill., U.S.A.
- REED-HILL, Professor Robert Ellis, D.E., M.S., Associate Professor, U.S. Coast Guard Academy, New London, Conn., U.S.A.
- SHEINBERG, Haskell, B.S., Staff Member, Los Alamos Scientific Laboratory, P.O. Box 1663, Los Alamos, N. Mex., U.S.A.

PERSONAL NOTES

SIMS, Raymond Bernard, B.Sc., Ph.D., M.I.Mech.E., A.Inst.P., Chief Engineer, Research and Development, Davy and United Engineering Co., Ltd., Sheffield.

As Junior Members

HAZZARD, Richard, Assistant Metallurgist, Humber Ltd., Stoke, Coventry.
HOTCHKIES, Livingstone Mackay, Metallurgist, Atlas Steels, Ltd., Export Division, Welland, Canada.
IRISH, Frederick, Experimental Officer, British Insulated Cables Ltd., 38 Wood Lane, London, W.12.
WADSWORTH, Keith, Development Draughtsman, Yorkshire Imperial Metals, Ltd., Leeds.

As Student Members

BATTY, George Peter, Metallurgical Apprentice, Yorkshire Imperial Metals, Ltd., Leeds.
BREEDIS, John F., Met.Eng., M.Eng., Assistant in Research, Hammond Metallurgical Laboratory, Yale University, New Haven, Conn., U.S.A.
BROOKES, Christopher Anthony, L.I.M., Research Assistant, Cavendish Laboratory, Cambridge.
CLAUER, Allan Henry, B.S., Student, Department of Mining and Metallurgy, University of Wisconsin, Madison, Wis., U.S.A.
GILDING, David Brian, B.Sc., Grad.Inst.P., Research Student, Royal School of Mines, London, S.W.7.
LAUTA, Frank John, B.S., Student, Department of Mining and Metallurgy, University of Wisconsin, Madison, Wis., U.S.A.
RUSKIN, Arnold Milton, B.S.E., Student, 3044 East Engineering Building, University of Michigan, Ann Arbor, Mich., U.S.A.
VETTERS, Archibald, B.Sc., A.R.C.S.T., Research Student, Department of Metallurgy, Royal College of Science and Technology, Glasgow.
YOUNG, Alan, B.Sc., Foundry Assistant Supervisor, Magnesium Elektron, Ltd., Swinton, Manchester.
ZAHN, Rüdiger Horst Willy, Cand. Rer. Met., Student of Metallurgy, Clausthal Bergakademie, Zehntnerstrasse 19, Clausthal-Zellerfeld (Harz), Germany.

PERSONAL NOTES

DR. G. L. J. BAILEY has been appointed Superintendent of the Development and Research Department Laboratory of The Mond Nickel Co., Ltd., Birmingham. Since 1955 he has been Superintendent of the Company's Platinum Metals Research Laboratory at Acton.

DR. W. BETTERIDGE has been appointed Superintendent of the Platinum Metals Research Laboratory of The Mond Nickel Co., Ltd., Acton. He joined the Company in 1947 and has been concerned primarily with the development of high-temperature materials.

MR. G. F. BIDMEAD has taken up an appointment as Principal Research Chemist with the B.S.A. Group Research Centre, Birmingham.

SIR LAWRENCE BRAGG has been elected an Honorary Fellow of the Royal Institute of Chemistry.

MR. J. I. BUCKLEY has been appointed lecturer in metallurgy at the Brunel College of Technology, Acton.

DR. W. H. COLNER has left the Armour Research Foundation and is now at the Hughes Research and Development Laboratory, Culver City, Calif.

DR. R. G. COPE has left the Atomic Weapons Research Establishment to join the Development and Research Section of the Platinum Metals Division of The Mond Nickel Co., Ltd., Acton.

DR. A. L. DAVIES has left University College, Cardiff, where he gained the Ph.D. degree, and has taken up an appointment with the Parkinson Cowan Group, Birmingham.

MR. G. A. DUNLOP has joined the metallurgical staff of Mount Isa Mines, Ltd., Queensland.

MR. H. H. EGGINGTON has been appointed General Manager of British Ropes, Ltd., Doncaster Wire Mill, Doncaster.

DR. L. R. T. GARDNER has left Sheffield University and taken up a post with the U.K. Atomic Energy Authority, R. and D. Branch, Springfields, near Preston.

MR. RUDOLF HAHN, Chairman and Managing Director of B.K.L. Alloys, Ltd., has been elected President of the Aluminium Development Association.

MR. KENNETH HALL, Assistant Director of Operations of Aluminium, Ltd., and a Director of the Northern Aluminium Co., Ltd., has resigned.

MR. C. J. HUFFMAN has been appointed Technical Director of the R. D. Werner Co., Inc., Greenville, Pa. He was formerly with the Kaiser Aluminum and Chemical Corp.

DR. R. L. JONES, who obtained a doctorate in metallurgical engineering at the University of Michigan last August, has taken up a post as senior research engineer in the engineering materials section of Convair Astronautics, San Diego, Calif.

DR. R. E. KEITH, metallurgist at the General Electric Research Laboratory, Schenectady, N.Y., has been appointed to the liaison scientists staff in the field of metallurgy and ceramics.

DR. R. T. PARKER has been appointed Head of the Banbury and Geneva offices of Aluminium Laboratories Limited, in succession to Mr. R. D. Hamer. Dr. Parker has been Director of Research of the Banbury Laboratories since 1950.

DR. S. F. REITER, Technical Manager of the Rome Fastener Corp., has been appointed a lecturer in the Department of Metallurgy of Yale University.

MR. L. ROTHERHAM, Member for Research of the Central Electricity Generating Board, has been co-opted to the Council of the British Welding Research Association.

MR. MERRILL A. SCHEIL, Director of Research, A. O. Smith Corp., Milwaukee, has been elected a Trustee of the American Society for Metals for 1959 and 1960.

DR. I. S. SERVI has left the Electro Metallurgical Co. to take up an appointment as Director of Research of the Metal Division of Kelsey-Hayes Co., New Hartford, N.Y.

DR. EARLE C. SMITH, Chief Metallurgist and Director of Research for Republic Steel Corp., Cleveland, has been elected a foreign honorary member of the Verein Deutscher Eisenhüttenleute.

MR. E. J. C. SMITH, Technical Manager of Rhodesian Alloys (Pvt.), Ltd., has been appointed a Local Director of the Company.

DR. W. STEVEN, Superintendent of the Development and Research Department of The Mond Nickel Co., Ltd., Birmingham, has been appointed Director of Research of the International Nickel Co., Inc., New York. He has also been elected an Assistant Vice-President of that Company.

MR. J. G. WISTREICH, Head of the Mechanical Working Division of the British Iron and Steel Research Association, has been awarded the D.Sc.(Eng.) degree by the University of London.

Deaths

The Editor regrets to announce the deaths of:

MR. HERBERT WILLIAM GREENWOOD, an Original Member, on 30 April, 1959.

MR. WILLIAM ALBERT RADLEY, an Original Member, in April, 1959.

COUNCIL 1959-60

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Bailey, G. L., C.B.E., M.Sc., F.I.M.; Director, British Non-Ferrous Metals Research Association.

Past-Presidents:

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Pfeil, L. B., O.B.E., D.Sc., A.R.S.M., F.I.M., F.R.S.; Director, The Mond Nickel Co., Ltd.; Director, Henry Wiggin and Co., Ltd.

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Jones, E. H., A.R.I.C., M.I.M.M.; Joint Managing Director, Capper Pass and Son, Ltd.; Director, Victor G. Stevens, Ltd.

O'Neill, Professor Hugh, M.Met., D.Sc., F.I.M.; Professor of Metallurgy, University College of Swansea, University of Wales.

Prain, Sir Ronald, O.B.E.; Chairman and President, Rhodesian Selection Trust, Ltd.; Chairman and President, Roan Antelope Copper Mines, Ltd.; Chairman and President,

OBITUARY

Dr. Marcel Ballay

Dr. Marcel Ballay, President and Managing Director of the Centre d'Information du Nickel, Paris, died on 2 February 1959 after a short illness.

Born in 1896, Ballay embarked upon a career in metallurgy in the laboratory of the de Dion plant, of which he was appointed Head in 1925. In 1928 he joined the Centre d'Information du Nickel as Technical Manager, becoming Vice-President in 1950 and President in 1954. In 1928, Ballay received his diploma as Doctor of Physical Sciences. In 1935 he was promoted to the rank of Chevalier de la Légion d'Honneur in recognition of his qualities as a technical professor and, in 1955, the rosette of Officier de la Légion d'Honneur was conferred upon him in recognition of his services to industry and to the teaching profession. He was a member of many learned societies in France and Great Britain.

Mufulira Copper Mines, Ltd.; Chairman and President, Chibuluma Mines, Ltd.; Chairman, Ndola Copper Refineries, Ltd.; Chairman, Anglo Metal Co., Ltd.; Director, International Nickel Company of Canada, Ltd.; Director, Metal Market and Exchange Co., Ltd.

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Alexander, W. O., B.Sc., Ph.D., F.I.M.; Research Metallurgist, Imperial Chemical Industries, Ltd., Metals Division, Birmingham.

Allen, N. P., M.Met., D.Sc., F.I.M., F.R.S.; Superintendent, Metallurgy Division, National Physical Laboratory, Teddington.

Cunliffe, The Hon. Geoffrey, Director, James Booth and Co., Ltd.

Cuthbertson, Professor J. W., D.Sc., F.I.M., A.M.I.E.E.; Professor of Metallurgy, University of Nottingham.

Dickinson, F., B.Sc. (Eng.), F.Inst.P., F.I.M.; Manager, Development and Research Department, The Mond Nickel Co., Ltd., London.

Dono, G. E., J.P.; Director, Morris Motors, Ltd., and associated companies.

Finniston, H. M., B.Sc., Ph.D., A.R.T.C., F.I.M.; Research Manager, C. A. Parsons and Sons, Ltd., Nuclear Research Centre, Newcastle-upon-Tyne.

Holden, C. H. M., F.I.M.; Managing Director, The Hall Street Metal Rolling Co., Ltd.; Managing Director, Charles Clifford, Ltd.; Chairman, V. J. Copas, Ltd.; Director, Metallisation, Ltd.; Director, Metallisation (Scotland), Ltd.; Director, Metal Sprayers, Ltd.; Director, The Midland Metallurgical Laboratories, Ltd.

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Randall, W. F., B.Sc., A.R.S.M., M.I.E.E., F.I.M.; Deputy Chairman, Telegraph Construction and Maintenance Co., Ltd.; Chairman, Magnetic and Electrical Alloys, Ltd.; Managing Director, Sankey-Telcon, Ltd.; Chairman, Telcon Magnetic Cores, Ltd.; Chairman, Temco, Ltd.; Chairman, Toolpro, Ltd.

Rotherham, L., M.Sc., F.Inst.P., F.I.M., Research Member of the Central Electricity Generating Board, London.

Tomlinson, F. W., M.A., M.I.E.E.; Managing Director, Pyrotenax, Ltd.; Executive Vice-President, Pyrotenax of Canada, Ltd.; Director, Pyrotenax Australia Pty., Ltd.

Waine, F.; Chairman, Thomas Bolton and Sons, Ltd.; Director, British Insulated Callender's Cables, Ltd.; Director, Connolly's (Blackley), Ltd.; Chairman, United Telephone Cables, Ltd.; Deputy Chairman, Southern United Telephone Cables, Ltd.

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Oxford

Geach, G. A., Ph.D., M.Sc., F.I.M.; Research Laboratories, Associated Electrical Industries, Ltd.

Scottish

Murray, H. S. S.; Chairman and Managing Director, Electro-Platers, Ltd.

Sheffield

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SENIOR VICE-PRESIDENT

and

Not more than four Institute of Metals (Platinum) Medallists who are, or have been, members of the Council (to be selected by the President), with power to the President to co-opt not more than two other persons.

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OTHER NEWS

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Leeds Metallurgical Society

At the last meeting of the 1958-59 session, held on 7 May, Mr. F. S. LEIGH, of Birlec-Efco (Melting), Ltd., spoke on:

Electric Melting Furnaces

He said that the selection of a furnace had to be considered against a background in which the rising cost of the basic fuels favoured the electric furnace. The electric melting furnaces in general production use are arc furnaces, cored low-frequency furnaces, and coreless furnaces of the high-frequency and mains-frequency types.

Arc furnaces of up to 80 tons capacity were described, in which hot slags could be used for refining purposes. These furnaces were originally used for the melting of alloy steels, which continued to be their main application, but they were also being used for the melting of alloy irons, including nodular cast iron, and for the melting of copper and nickel.

The different features of the Wyatt and Tama types of cored low-frequency induction furnaces were then described. These furnaces were generally used for the melting of aluminium alloys and brasses, but were now being developed for holding cast irons.

The coreless high-frequency furnaces used for the melting of alloy steels and nickel alloys were described and compared with the newer mains-frequency furnaces which were being used for melting the more difficult copper alloys and for alloy cast irons. The recovery of cast-iron turnings was economical in the mains-frequency furnace and the production of nodular cast iron was particularly easy. An improvement had been noted in the graphite distribution of cast iron melted in mains-frequency furnaces in comparison with established practice.

The meeting wound up with questions and discussion in which a mains-frequency furnace for degassing purposes was described. Mr. Leigh made a particular point that furnace output could sometimes be increased substantially by higher power rating, although at the expense of shorter lining life: this was in many cases, however, a relatively small part of the total production cost and could be more than offset by the other savings made.

POWDER METALLURGY JOINT GROUP

MR. D. A. OLIVER, C.B.E., M.Sc., F.Inst.P., F.I.M., has succeeded DR. IVOR JENKINS, F.I.M., as Chairman of the Group. DR. G. L. MILLER, has been elected Deputy Chairman.

The next meeting of the Group will be held at Church House, Great Smith Street, London, S.W.1, on Wednesday, 16 December, when there will be a Symposium on "The Powder Metallurgy of Magnetic Materials". There will be a conversazione in the evening. The papers contributed to the symposium will be printed in *Powder Metallurgy*, 1959, No. 4, which is due to be published, in advance of the meeting, in November.

OTHER NEWS

Symposium on Hydrometallurgy

The Adelaide Branch of the Australasian Institute of Mining and Metallurgy is to hold a Symposium on "Wet Processing of Minerals and Industrial Products" on 16-19 February 1960.

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The Symposium will be opened by two well-known authorities, who will deliver review papers on hydrometallurgy, one dealing with fluid mechanics and the second with other unit operations. The technical programme will comprise about twelve specially contributed papers. There will be visits to plant, open-forum discussions, and social functions in connection with the meeting.

Details can be obtained from the Aust. I.M.M. Symposium Secretary, c/o South Australian Department of Mines, Osman Place, West Thebarton, Adelaide, S.A.

Glossary of Microscopical Terms

The Royal Microscopical Society is compiling a glossary of the terms used in microscopy, including electron microscopy. Members of the Institute of Metals are invited to submit terms which they judge to require clarification, with or without definitions and with or without the equivalents in other languages. These should be sent to Dr. J. G. Cockburn at the Iron and Steel Institute, 4 Grosvenor Gardens, London, S.W.1. All communications will be acknowledged in the Journal of the Royal Microscopical Society.

International Symposium on the Metallurgy of Plutonium

The Société Française de Métallurgie, in association with the Commissariat à l'Energie Atomique, is organizing an International Symposium on the Metallurgy of Plutonium, to be held at Grenoble on 19-22 April 1960.

The subjects to be covered range from the physics and metallurgy of plutonium to the technology of its use as a nuclear fuel.

Further details regarding attendance at the Symposium and the submission of papers for it may be obtained from the Société Française de Métallurgie, 25 rue de Clichy, Paris (9^e), or from M. E. Grison, Centre d'Etudes Nucléaires, Fontenay-aux-Roses (Seine).

The Techniques of Non-Destructive Testing

An evening course of ten lectures on the "Techniques of Non-Destructive Testing" will be held in the Physics Department of the Brunel College of Technology, Woodlands Avenue, Acton, London, W.3, every Wednesday from 7 to 8.30 p.m., beginning on Wednesday 7 October 1959. Lectures will be given by well-known specialists in the subject, and by members of the College staff. These will be of interest to Inspectors and others engaged in the work, and also to graduates and holders of the H.N.C. in Engineering and Science subjects, who require an introduction to the methods employed in non-destructive testing.

The fee for the course will be £1. Further details may be obtained from the Physics Department at the College.

Corrigendum

In the list of newly elected members published on p. 159 of the May issue, D. BAIL should have read D. BALL.

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